5. RESEARCH QUESTIONS AND METHODS

5.1. Research question

Given the review of relevant theories, the literature on the topic, and the specific context of the implementation of the Colombian health care reform in Bogota, the research question was stated in these terms:

> ***What are the types of relationships observed between purchasers and public providers of health care services in the public sector of Bogota, Colombia, and to what extent can these relationships be explained by the TCE framework, specifically by Relationship-Specific Investments and contract incompleteness?***

5.2. Aim

To understand the role of transaction costs in the Purchaser-Provider Split and public hospital autonomisation in an urban setting in Colombia, in order to widen the research community's understanding of, and inform policy-makers about, the desirability of marketising and autonomisation hospital reforms in this context.

5.3. Objectives

5.3.1. To describe and analyse the existing types of relationships between ESEs (autonomous hospitals) and purchasers, within a continuum between spot contracting and long-term relationships.

5.3.2. To understand the role of contract incompleteness and Relationship-Specific Investments in the observed types of relationships between ESEs and purchasers

5.3.3. To describe and analyse the coexistence of hierarchical relationships and their interaction with contractual relationships between the ESEs (autonomous hospitals) and the Secretariat of Health of Bogota.

5.3.4. To draw conclusions on the usefulness of the Transaction Cost Economics framework in explaining the relationships between the

autonomous hospitals and their purchasers, i.e., the Secretariat of Health of Bogota and ARSs.

5.4. Methods

5.4.1. Location of study

The study was carried out in Bogota, the capital city of Colombia. This city was selected because it was the researcher's place of residence, which made it more likely to carry out fieldwork, given lack of funding. The researcher's better networking with SOH, ESEs and ARSs officers also made it easier to gain their willingness to collaborate with the research.

But beyond these pragmatic considerations, the Bogota case was rich enough to address the research questions, because hospital autonomy in this city has advanced more than in any other area of Colombia and the local market dynamics make this case a very illustrative one for the purpose of generating new knowledge in the field.

5.4.2. Research design

This research was a case-study of the public health network of Bogota, whose basic components were the SOH and the 22 ESEs. According to Yin's (1994) classification, the design was an embedded case-study because it involved the study of sub-units of analysis, i.e., purchasers and ESEs, but with the aim of better understanding the role of transaction costs in the observed types of relationships between the ESEs and their major purchasers (SOH and ARSs). The reasons for the embedded case-study design and its weaknesses are commented on in section 5.5.

The set of hospitals analysed consisted of the 22 entities (autonomous hospitals, or ESEs) under the jurisdiction of the Bogota Secretariat of Health (SOH). For each ESE, its relationship with the SOH and the five ARSs providing the largest share of its revenues were discussed in the interview with the manager. Additional interviews were carried out with three officials at the SOH (the current Secretary and two ex-officers) and the four ARSs with the largest enrolment in the city, plus the only one with which it was possible to establish contact besides the four largest ARSs.

The respondents were selected as follows: for the 22 ESEs, the manager (i.e., the Chief Executive) was contacted by the researcher. Regarding the SOH, the Secretary and two ex-officers were interviewed. The Secretary was an obvious target for interview, given his responsibility for hospital policy before and during field work. The other two officers were selected purposively, given their previous relationship with the researcher. In addition, it is likely that their current employment outside the SOH at the time of interview made them feel freer to speak about current and past policies. Regarding ARS, the researcher contacted the medical directors through acquaintances that facilitated an initial contact. Except for ARSIII,[1] none of them had a previous relationship with the researcher. All respondents were invited by the researcher to participate on a voluntary basis. None of the individuals contacted initially rejected the invitation to participate. Table 5.1. summarizes the roles of the interviewees.

Table 5.1.
Number of interviewees, their role in their organizations and how they were first contacted

	Number of interviewees	Role	First contact
ESEs	22	ESE Managers (CEOs)	Directly by the researcher: 4 Indirectly through third parties: 18
SOH	3	Secretary plus two high-level ex-officers	Directly by the researcher: 2 (the Secretary and one of the ex-officers). Indirectly: 1.
ARSs	5	Medical directors	Indirectly

This research project entailed primarily qualitative methods, namely, semi-structured interviews. The fact that the role of transaction costs is hard to quantify because of the many variables that interact to a given outcome, made it impossible to run quantitative analysis on a single unit of analysis. In addition, it is necessary to understand the dynamics of the contracting process in its specific context, and quantitative methodologies don not help to achieve this understanding.

[1] See chapter 6 for a list of units of analysis.

Although qualitative methods are often used in an inductive way, this research used both a deductive and an inductive approach. By using the reference framework of TCE, a general research question and four specific objectives were proposed. These provided the framework for carrying out the interviews. Once fieldwork finished, a fresh review of TCE and a general view of the findings was used to derive a set of theory-based predictions that the data were able to test. These predictions were put forward as propositions and were used to more precisely explore the evidence on each of the four specific objectives. Propositions are set out at the beginning of each chapter from 6 to 9 as hypotheses to be tested through the findings, and they are later summarised at the end of each findings section to verify if they were confirmed or rejected.

Thus, the process of hypothesis testing was carried out through matching patterns between theory and evidence. For example, if TCE predicts a role for RSIs as a source of *ex-post* maladaptations, the identification of these RSI was followed by a search in the transcripts for the expected consequences. Predictions of theory were either confirmed or rejected by this pattern-matching. Although the major focus of this research was TCE, it was expected that this theory would fail to thoroughly explain the findings. Therefore, when TCE predictions were rejected, a better explanation was searched for through the alternative NIE theories, following the same pattern-matching process.

On the inductive side of the analytical approach, other issues that were not anticipated during the design of the research and that are not explicitly addressed by theory, were allowed to fine tune the analysis. The most notable issue was the degree of cooperation between purchasers and ESEs, which was found to be a key point in the relationships between ESEs and payers. Another issue was the objective function of ESE managers, which proved to be important to explain their behaviour. Topics such as these were explored in depth as they arose during the analysis, as they were found to be key additional evidence to support or reject the stated propositions. Accordingly, quotes referring to these issues were searched during the stage of data analysis.

As a case-study, this research aims at analytic generalisation by testing theory against the findings, rather than aiming at statistical generalisation, what Yin (1994) classifies as a “Level Two Inference”. Hence, issues of small sample size are not relevant because the study is not framed in a sampling logic. The use of theory in this thesis is key in the

research strategy as a guiding framework to interpret the findings, which in turn support or reject the theory and the best explanation is developed with the help of the rival theories. In fact, it is not expected that a single theory explains all the findings but rather a mix of theories is necessary to build a better explanation. A further use of this analytical generalisation is to derive new research questions to improve the predictive power of theories.

Basic quantitative secondary data were also used for comparison purposes. These data included size of ESEs in terms of bed count, total revenues, disaggregated revenues by purchaser, and other data on outputs and inputs. These data were obtained from each ESE and further complemented with data from the SOH.

The greater emphasis on the ESE perspective (as opposed to the purchaser's) in the analysis of the PPS may seem to be counterintuitive, because it would make more sense to look at it primarily from the purchaser side. However, given that a major purpose of hospital autonomisation and the PPS is to change hospital behaviour, it made more sense to look at the hospital side of it, to analyse in more detail their responses, and compare them to the expected outcomes of autonomisation. Nevertheless, the purchaser side was also analysed although not in such depth.

5.4.3. Objective # 1

To describe and analyse the existing types of relationships between ESEs (autonomous hospitals) and purchasers, within a continuum between spot contracting and long-term relationships.

Taking the purchaser-ESE relationship as the embedded unit of analysis, it was classified within the continuum of spot contracting and long-term/exclusive relationship. Although it was expected that ESEs provided services to enrolees of insurers with which they had no contract, the bulk of their revenue was generated from contract-based relationships. Semi-structured interviews with ESE managers were carried out to enquire for the following components of contracting:

- How was the contract awarded: on a competitive basis, or on a monopolistic basis?

- In the case of non-monopolistic settings: how many competitors bid for the contract? (this question and the previous were also addressed from the perspective of the SOH and other major purchasers, if ESE managers were not well informed about how many bidders were competing for a given contract).
- Duration of the contract.
- Likelihood of renewing or terminating the contract for the next period.
- Previous history of contract renewals during the previous five periods.
- Previous history of contract termination, and reasons for termination.
- Previous occurrence of litigation and outcome of the process.

Given that the resulting type of relationship for each contract is determined by the attitudes and perceptions of both the purchaser (SOH and ARSs) and the provider (the ESEs), both sides were analysed.

The analysis of the data collected was guided by the following propositions:

- Proposition 1: Long-term relationships are more likely to occur due to the presence of a pre-existing bilateral monopoly, i.e., the SOH and the ESE at the local level are the only purchaser and provider respectively, both before and after the PPS.
- Proposition 2: Spot-contracting is less likely to occur than longer-term relationships, even for undifferentiated services.
- Proposition 3: When a bilateral monopoly emerges from the PPS, the parties to the relationship have no exit option; it predisposes the relationships to become conflict-burdened, instead of cooperative.
- Proposition 4: Competitive markets would lead to relationships of a shorter-term than those of bilateral monopolies.

5.4.4. Objective # 2

To understand the role of contract incompleteness and Relationship-Specific Investments in the observed types of relationships between ESEs (autonomous hospitals) and purchasers

For the development of the second objective, semi-structured interviews with ESE managers, SOH officers and officers from the selected ARSs enquired for the causes and consequences of contract incompleteness and RSI; the following aspects of each contractual relationship were analysed:

5.4.4.1.Regarding contract incompleteness:

- Manager's perception of (elicited from semi-structured interview):
    - Degree of uncertainty regarding prices (of input and product markets) and quantities demanded for current contract period.
    - Degree of uncertainty regarding which of the contracting parties bears the financial risk of unexpected fluctuations of demand and costs.
    - Degree of complexity of the contracted products and difficulty in defining them.
    - Degree of unobservability and unverifiability of the contracted products.
    - Presence of information asymmetry favouring the provider.
    - Capacity of the purchaser to monitor quality.
    - Overall completeness of the contract, i.e., extent to which the contract spells out all the potential contingencies.
    - Costs associated with designing, negotiating, monitoring, enforcing and renegotiating contracts.

Using this information, the association between each of these items and the observed relationships between purchasers and the ESE were established. It was expected that the more incomplete the contracts, the more likely the relationships were of a long-term type.

5.4.4.2.Regarding RSI:

- Presence of, or need to invest in, equipment or technology that is specific to the relationship.
- Presence of, or need to invest in, information technology and administrative procedures that are specific to the relationship.
- Need to invest in new buildings or in improvements of existing ones, that were specific to the relationship.

- Presence of, or need to invest in, a detailed knowledge of the served population of a contracting entity in order to increase responsiveness and guarantee long-term loyalty and better health outcomes.
- Presence of, or need to invest in dedicated assets that would not be utilised if the relationship is terminated and would lead to excess capacity.
- Presence of, or need to invest in human specific assets, like training in specific skills.
- Presence of other RSI.
- Willingness of managers to invest in these RSI.
- Perceived risk of being held up by the purchaser, once these RSI have been incurred, or if they already exist.
- Given the risk of hold up, costs of keeping costly relationships with alternative purchasers.
- Costs of keeping information that would be valuable for quality and efficiency enhancing purposes.
- Role of purchaser's credible commitments and risk premiums for incurring relationship-specific investments (are they perceived as necessary?).
- Impact of not investing in RSI, on technical efficiency, and allocative efficiency.

Using this information, the association between each of these items and the observed relationships between purchasers and the ESE was established. It was expected that the more RSI have to be incurred, the more likely the relationships were of a long-term type. Besides, it was expected that given the need for the provider to incur relationship-specific investments, if the purchaser was not willing to give credible commitments, the provider would be less likely to incur those specific investments.

The analysis of the data collected was guided by the following propositions:

- Proposition 1: There are relevant RSI in the relationships between ESEs and payers (SOH and ARSs).
- Proposition 2: The presence of RSI increases the transaction costs of relationships observed between ESEs and payers (SOH and ARSs).
- Proposition 3: Contract incompleteness pervades the relationships between ESEs and payers (SOH and ARSs).

- Proposition 4: Contract incompleteness is by itself a source of transaction costs of relationships observed between ESEs and payers (SOH and ARSs).
- Proposition 5: The transaction costs of these relationships, stemming both from RSI and contract incompleteness, result into long-term relationships.

5.4.5. Objective # 3.

To describe and analyse the coexistence of hierarchical relationships and their interaction with contractual relationships between ESEs (autonomous hospitals) and the Secretariat of Health of Bogota

For the development of the third objective, the unit of analysis was the ESE. Semi-structured interviews with ESE managers and SOH officers enquired for the coexistence of hierarchical and contractual relationships with the Health Secretariat of Bogota (the major purchaser for all ESEs studied), and the influence of the hierarchical relationship on the contract-based ones. Influence activities were considered those related to pressures or undue interference by bureaucrats from the Secretariat or other public bodies, as well as from politicians or local powerful interest groups. Specific topics addressed in the interviews were:

- Extent of influence activities from the side of the purchaser, that deviate ESE managers' decision-making from efficiency-quality improvement
- Impact of influence activities on the performance of the contract
- Managers' ability to avoid influence activities
- Presence of other principals besides the Health Secretariat, and issues arising from conflicting agendas of those principals
- Degree of managers' autonomy in decision-making regarding hiring and firing personnel, budgeting, and procurement of hospital supplies.
- Degree of managers' autonomy in setting the strategic plan for ESEs and its actual implementation.

The analysis of the data collected was guided by the following propositions:

- Proposition 1: The relationships between ESEs and the SOH are successfully shifted from a hierarchical type to an arms-length type as a result of their transformation into autonomous entities.
- Proposition 2: Shifting the day-to-day management to the hospital locus is optimal because it allows managers to match hospital responses to local market needs.
- Proposition 3: The market environment will be enough to keep ESEs from adopting undesired responses to autonomy, so the SOH can keep its arms-length relationship.

5.4.6. Objective # 4

To draw conclusions on the usefulness of the Transaction Cost Economics framework in explaining the relationships between the autonomous hospitals and their purchasers, i.e., the Secretariat of Health of Bogota and ARSs

For the development of the fourth objective, the information collected from the interviews was summarised and interpreted at the SOH level as the larger case-study unit of analysis.

It was anticipated that the findings of this research proposal might be counterintuitive from the perspective of TCE. If providers or purchasers did not seek to economise on transaction costs, it could be argued that they were pursuing goals other than cost minimisation or output maximisation. It would be necessary then to confront the findings with alternative theoretical frameworks that better explain the findings. Three particularly relevant theories in the analysis were: public choice, property rights and principal-agent theory, as explained in chapter 2. Accordingly, the interviews were conducted in such a way that issues relating to these alternative theories were allowed to emerge, avoiding restriction to the TCE framework.

The analysis of the data collected was guided by the following propositions:

- Proposition 1: Regarding agency theory, the lack of a clear and uni-dimensional objective function adequately explains ESE managers' response to autonomy, as agents to the SOH and ARSs.

- Proposition 2: Regarding property rights theory, the lack of an adequate allocation of property rights explains why some ESE managers do not invest time and effort in reducing transaction costs in their relationships with payers.
- Proposition 3: Regarding public choice theory, politicians' and managers' interests other than improve hospital performance explain the lack of a role of transaction costs in shaping the relationships between ESEs and purchasers.

5.4.7. Data collection tools

The interview schedules (one for hospital managers, other for purchasers) was designed for a semi-structured interview, such that the research topics were thoroughly addressed but allowing for flexible discussion of the topics. Annex 3 shows these tools.

5.4.8. Data analysis

Data collection, coding and categorising

The interviews were tape recorded and verbatim transcribed as Word documents. These were later transferred to NUD*IST for coding and categorising. All these processes were done with the text in Spanish. Although categorisation was made easier because the interviews followed the same sequence of themes, new subcategories emerged that required a more detailed tree for the analysis. These new subcategories emerged as a result of a more detailed analysis of the previously established categories. For example, regarding contract incompleteness, it was found that a large source of disputes was the issue of how to define the boundaries of the benefit packages that were contracted with different payers. It was also found that observability and verifiability was not a big concern as quality was not adequately assessed by payers. Thus new subcategories for "boundaries of the benefit packages" and "concern for quality" emerged during field work and resulted in new branches in the analytical tree. A new category regarding cooperation also emerged as a result of the researcher's previous knowledge of the dynamics between ESEs and their payers, and the evidence collected in the interviews. Previous knowledge made it easier to detect the role of cooperation and the consequences of the decision to cooperate or not. The tree was organised following the four specific objectives listed above, although the analysis of each set of data did not necessarily follow the order of the interview questions. The analytical tree is included in

Annex 4. The analysis of the categorised text was then guided by the propositions set out for each specific objective. The report was written using as much as possible the original quotes of the interviewees, which were translated to English and put in italics in the text. All the processes of data collection, transcription, translation and analysis were carried out exclusively by the researcher.

Pattern matching: confirming and refuting evidence

The process of pattern matching, as shown above, was undertaken by comparing the findings with the predictions of theory. For example, TCE predicts that RSI cause *ex-post* maladaptations, which shape the relationships by searching for a governance structure that minimises transaction costs. When quotes were found that supported this prediction, they were taken into the analysis.

However, some of the predictions of theory not only were not found in the evidence but were clearly rejected. In this case, refuting evidence was used to guide the analysis of the three alternative NIE theories. For example, it was found that RSI did not shape the relationships between ESEs and the SOH as predicted by TCE. This refuting evidence raised the question: is it possible that ESE managers have alternative objective functions that are not optimized by minimising transaction costs? This question guided the analysis on the actual allocation of property rights, thus providing the basis for proposition # 2 of objective # 4. In addition, the property rights framework only allowed analysis of how property rights are allocated. But if they are incompletely allocated, as happens in the public sector, a different type of analysis is required regarding the motivations of public officers and politicians. Hence public choice theory helps to better map the findings by complementing the previous two NIE theories. Thus, refuting evidence was used to guide the analysis through the other three NIE theories.

Researcher's potential biases

An important aspect of qualitative research is the position of the researcher in the whole research process. In the case of this thesis, the researcher had previous experience in the Colombian health sector both as a consultant and as a researcher, for at least six years prior to field work. As a locally well-known analyst, the researcher had previous contacts with the SOH officers and some of the ESE managers and ARS officers

regarding other professional activities. This fact might have influenced interviewees' responses in terms of pleasing the researcher or giving strategic answers to protect their reputation or conceal a hidden agenda. However, the researcher's previous knowledge of some of the issues addressed during field work made it easier to unveil hidden motivations or desirability bias in responses. Previous knowledge also conveys the risk that the researcher biases analyses towards his own pre-conceptions. The researcher's personal views favouring a different approach to hospital policy (away from vertical integration and towards hard-budget constraints), might have influenced question wording and interpretation of data to give preference to those responses reflecting these pre-conceptions. Given the subjectivity that underlies field work and data analysis in qualitative research, it is unlikely that attempts to minimize this bias resulted in a completely objective assessment.

Validity and reliability

Another important point regarding the quality of qualitative research has to do with issues of validity and reliability. Beyond the long debate (Golafshani, 2003) about the inapplicability of these concepts (more related to quantitative research) to qualitative methods (more focused on subjectivity), it is relevant to make sure that the conclusions of this research are taken seriously by its audience. In order to assure validity, the main strategy was to triangulate with divergent interviewees. Given the high level of confrontation that pervaded the SS, ESE managers and ARS officers were expected to have divergent views. In addition, interviewing SOH officers was expected to provide a complementary view, both as third-party payers to ESEs and as the local authority which delegated the purchasing function to ARS.

Regarding reliability, although it is even more challenged than validity in qualitative research (Golafshani, 2003), some steps were taken to assure the best possible degree of rigor:

- Keeping the recorded interviews stored in .mp3 format and having them available upon request by the interviewee.
- Verbatim transcripts of all interviews, stored as .doc files (also available to the interviewee)
- Analytical tree and coded data in NUD*IST files.

- Translation into English as accurately as possible (even using colloquial expressions that were explained as footnotes).

Given that the interpretation of the data is strongly dependent on the researcher, as is typical of qualitative research, it is impossible to guarantee reliability in the same way it is dealt with in quantitative research. Thus, at the minimum, the strategies to assure validity are expected to strengthen the reliability of this thesis, as suggested by Golafshani (2003).

5.5. Ethical issues

This research did not involve experimentation with human subjects. However, ethical approval was obtained from the Ethics Committee of the London School of Hygiene and Tropical Medicine. Given that ESE managers and ARS officers are easy to identify when reading the thesis, issues of confidentiality of respondents were addressed by codifying the names of the ESEs and ARSs, as shown in chapter 6. The fact that three SOH officers were interviewed made easy to keep their confidentiality by referring to them as SOH officers.

5.6. Limitations of the methods

A large share of the studies on TCE are concerned with the prediction of the probability of a given type of governance structure. However, the relevant question is "what is the net effect on overall efficiency that results from the shift from one governance structure to another?" In the specific case of this research proposal, the change in governance structure is the PPS. An obvious research design to test the impact of different governance arrangements within which transaction costs are embedded, is to measure changes in hospital efficiency, productivity or quality after the PPS (Over and Watanabe, 2003); this design would provide an answer to the "make-or-buy" question. However, this approach has two major drawbacks: first, data availability and quality in developing countries do not allow the researcher to perform reliable and valid quantitative analyses, which in fact was reported by McPake et al (2003) for the case of Bogota.

A second, and more important drawback is that, even if good quality data were available, this indirect test of transaction costs inevitably masks phenomena that fall beyond the boundaries of this type of research. Although in the end, the choice of alternative arrangements to govern transactions is aimed at improving overall efficiency and quality, some of the costs and structural relations associated with those governance arrangements are not adequately evidenced in these indirect tests (Masten, 1995). On the one hand, they are unable to explain in depth the effect of RSI, namely, underinvestment in these assets, the costs of commitments or risk premiums by the purchaser in order to encourage the provider to invest in them, or the costs of providers' building safeguards to avoid being held up. On the other hand, indirect tests do not fully capture the impact of information asymmetries favouring hospital managers, their unwillingness to share information that could be useful for efficiency and quality improvements, or the purchaser's inability to adequately observe and verify the product of the contract.

Furthermore, the fact that research is limited in this area made a case-study more appropriate in order to achieve a basic level of understanding, more than robust explanations of the phenomena in question. However, the fact that the most representative relationships between hospitals and purchasers were analysed improved the study's generalisability at least in circumstances where public networks in urban contexts of middle income developing countries are similar to that of Bogota. It is clear though, that the use of the case-study method is aimed at analytic generalisation, not statistical generalisation. Testing theory through a deep understanding of the Bogota case certainly provides the basis for further hypotheses that can be tested with quantitative approaches aimed at statistical generalisation; in this same vein, the largely ignored role of the TCE framework in the PPS makes it worth building a knowledge base out of several case studies.